Inventor: James E. Ross   Sheet 1 of 7
Filed   07/09/01
Title: MEDICAL RECORDS, DOCUMENTATION,
TRACKING AND ORDER ENTRY SYSTEM

Leydig, Voit & Mayer   Attorney Ref: 212463
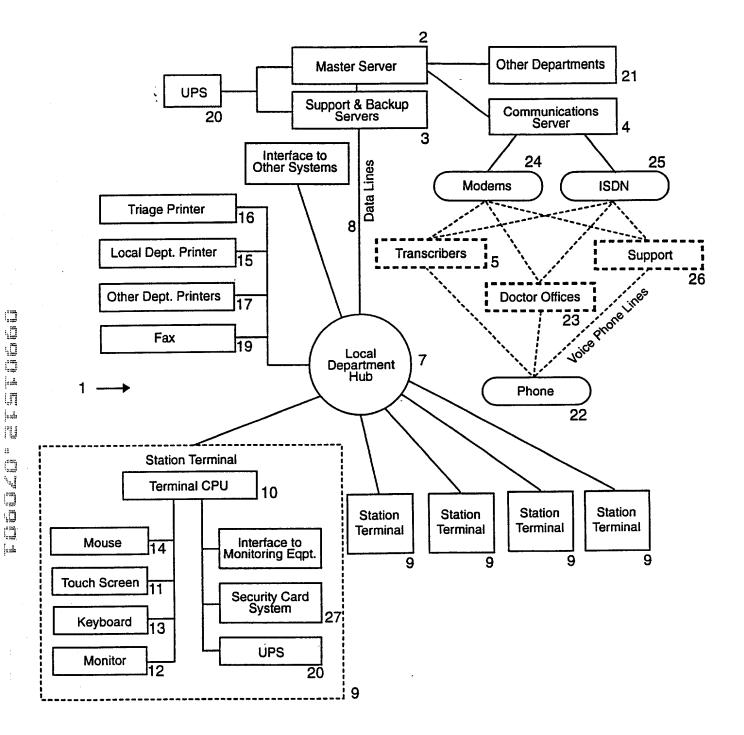Mark Joy   (312) 616-5600

Figure 1

Inventor: James E. Ross   Sheet 2 of 7
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User inserts smart card → Security Validation Module → User valid, record user, pass or refuse → Patient Tracking Module

101   102

Tracking Module 102 → User selects tracking view and availability

Select display: dept. layout, wating patients, patient complaints, nondictated, outstanding orders, latest vitals → Displays dept. and patient status in easiest to visualize formats

Select function: change, phone directory, utilities → Directory Module 103

→ Utilities Module 104

Patient history → Master Patient Module 107

→ Select visit from list of all visits → Language Generation Module 105 → To Screen or Printer Module 106 → Generates complete medical history of specified visit

Nurse enters new patient and visit → Master Patient Module 107 → Creates new visit, and if not previous patient, new patient

Master patient → Master Patient Module 107

Master Patient Module 107 → Triage Module 108 → Alerting system queued

Complaints → Complaints Module 109

Historical → Patient History Module 110

Vitals, nurse notes → Nurse Notes Module 111

Summary → Language Generation Module 105 → To Screen or Printer Module 106 → Triage report
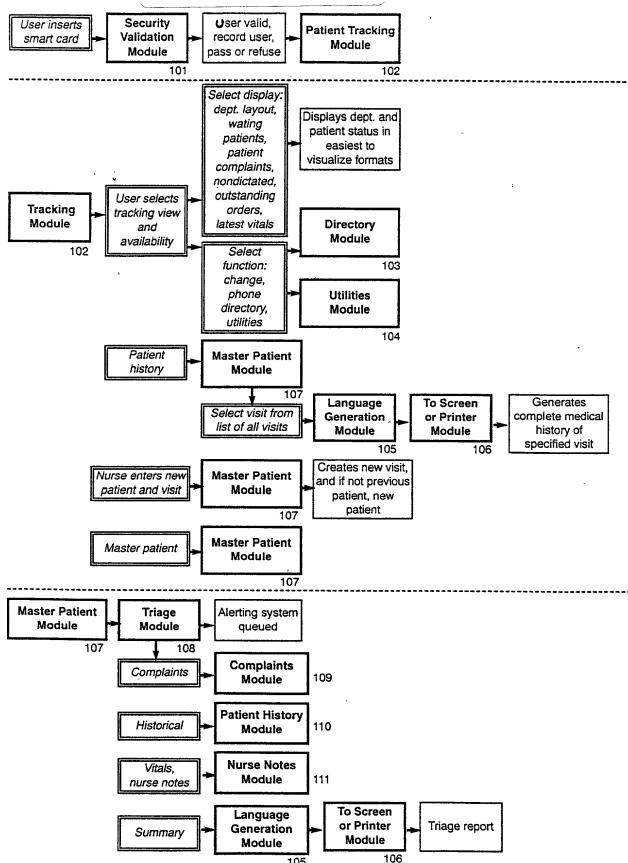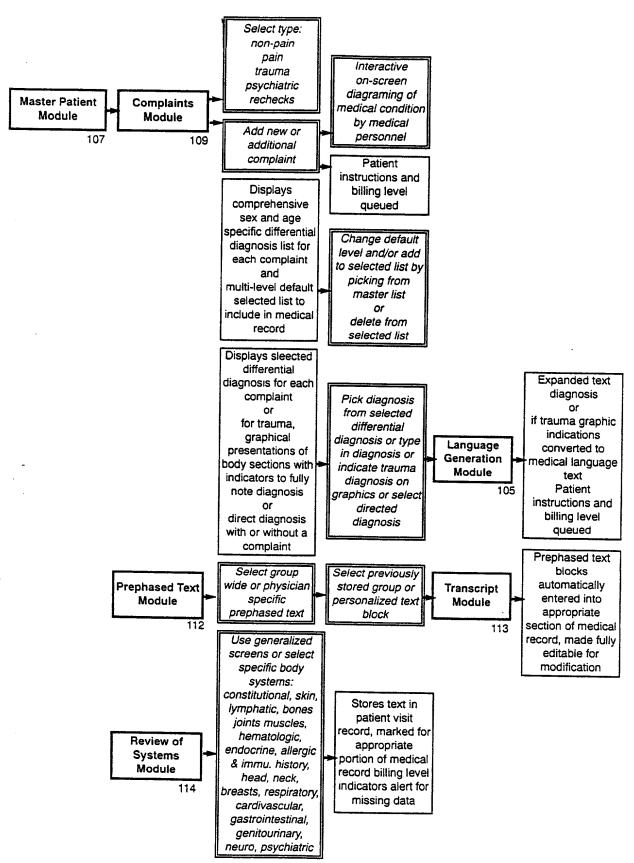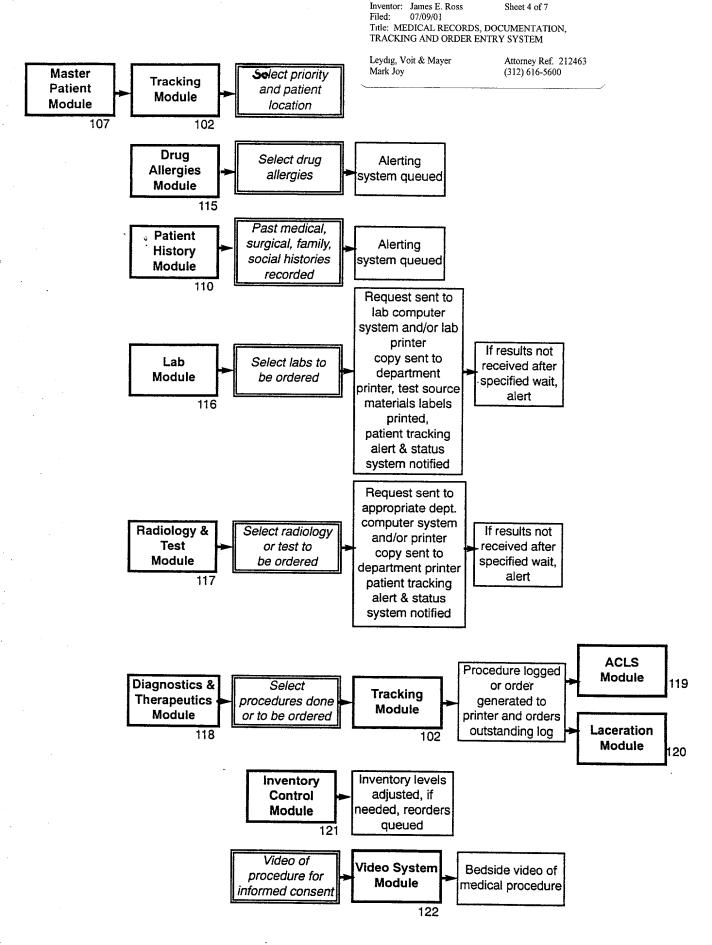
Figure 2:

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Master Patient Module
107

Complaints Module
109

Select type:
non-pain
pain
trauma
psychiatric
rechecks

Add new or additional complaint

Interactive on-screen diagraming of medical condition by medical personnel

Patient instructions and billing level queued

Displays comprehensive sex and age specific differential diagnosis list for each complaint and multi-level default selected list to include in medical record

Change default level and/or add to selected list by picking from master list or delete from selected list

Displays sleected differential diagnosis for each complaint or for trauma, graphical presentations of body sections with indicators to fully note diagnosis or direct diagnosis with or without a complaint

Pick diagnosis from selected differential diagnosis or type in diagnosis or indicate trauma diagnosis on graphics or select directed diagnosis

Language Generation Module
105

Expanded text diagnosis or if trauma graphic indications converted to medical language text Patient instructions and billing level queued

Prephased Text Module
112

Select group wide or physician specific prephased text

Select previously stored group or personalized text block

Transcript Module
113

Prephased text blocks automatically entered into appropriate section of medical record, made fully editable for modification

Review of Systems Module
114

Use generalized screens or select specific body systems: constitutional, skin, lymphatic, bones joints muscles, hematologic, endocrine, allergic & immu. history, head, neck, breasts, respiratory, cardivascular, gastrointestinal, genitourinary, neuro, psychiatric

Stores text in patient visit record, marked for appropriate portion of medical record billing level indicators alert for missing data

Figure 3:

Master Patient Module	Tracking Module	*Select priority and patient location*
107	102	

Drug Allergies Module	*Select drug allergies*	Alerting system queued
115		

Patient History Module	*Past medical, surgical, family, social histories recorded*	Alerting system queued
110		

Lab Module	*Select labs to be ordered*	Request sent to lab computer system and/or lab printer copy sent to department printer, test source materials labels printed, patient tracking alert & status system notified	If results not received after specified wait, alert
116			

Radiology & Test Module	*Select radiology or test to be ordered*	Request sent to appropriate dept. computer system and/or printer copy sent to department printer patient tracking alert & status system notified	If results not received after specified wait, alert
117			

Diagnostics & Therapeutics Module	*Select procedures done or to be ordered*	Tracking Module	Procedure logged or order generated to printer and orders outstanding log	ACLS Module
118		102		119

Laceration Module 120

Inventory Control Module	Inventory levels adjusted, if needed, reorders queued
121	

Video of procedure for informed consent	Video System Module	Bedside video of medical procedure
	122	

Figure 4:

```
┌──────────────┐   ┌──────────┐   ┌──────────────────┐   ┌──────────────────┐   ┌──────────────────┐
│Master Patient│→ │  Drug    │→ │ Medications in   │→ │Use default sig or│→ │ t department     │
│   Module     │   │ Module   │   │ department or    │   │ use automatic    │   │ drug order,      │
└──────────────┘   └──────────┘   │ prescriptions    │   │  modifiers       │   │ add to orders    │
      107              123        │                  │   └──────────────────┘   │ outstanding log  │
                                  │ Use physician    │   ┌──────────────────┐   ┌──────────────────┐
                                  │ preferred list,  │   │   Inventory      │   │ Prescriptions:   │
                                  │ alphabetical or by│   │   Control        │   │ print typeset    │
                                  │ drug category to │   │   Module         │   │ script with      │
                                  │ select drug      │   └──────────────────┘   │ appropriate      │
                                  └──────────────────┘           121            │ physician ID     │
                                                                                │ information ready│
                                                                                │ to be signed,    │
                                                                                │ print patient    │
                                                                                │ instructions     │
                                                                                │ for use of drug  │
```

```
┌──────────────┐   ┌──────────────┐   ┌──────────────────┐   ┌──────────────────┐
│ Consultation │→ │  Directory   │→ │ Select or enter  │→ │ If call not      │
│   Module     │   │   Module     │   │  consultant      │   │ returned after   │
└──────────────┘   └──────────────┘   └──────────────────┘   │ specified wait,  │
      124                                                     │  alert           │
                                                             └──────────────────┘
```

```
┌──────────────┐   ┌──────────────┐   ┌──────────────────┐   ┌──────────────────┐
│  Referrals   │→ │  Directory   │→ │ Select or enter  │→ │ Referral queued  │
│   Module     │   │   Module     │   │  referral        │   │ for patient      │
└──────────────┘   └──────────────┘   └──────────────────┘   │ instructions     │
      125                                                     └──────────────────┘
```

```
┌──────────────┐   ┌──────────────────┐   ┌──────────────────┐
│ Dr. Interval │→ │ Record physician │→ │ Each doctor visit│
│   Module     │   │ in room w/patient│   │ with patient     │
└──────────────┘   └──────────────────┘   │ logged           │
      126                                 └──────────────────┘
```

```
┌──────────────┐   ┌──────────────────┐   ┌──────────────────┐   ┌──────────────────┐   ┌──────────────┐
│ Nurse Notes  │→ │ Enter subsection:│→ │ Record nurse     │→ │ Selected orders  │→ │  Inventory   │
│   Module     │   │ vital signs, neuro│   │ activity or      │   │ completed are    │   │  Control     │
└──────────────┘   │ assmt., nursing  │   │ observation.     │   │ recorded and     │   │  Module      │
      111          │ PE, orders,      │   │ If orders        │   │ removed from     │   └──────────────┘
                   │ wound/splint,    │   │ completed,       │   │ outstanding      │          121
                   │ status,          │   │ select orders    │   │ orders log. Nurse│
                   │ move/admit,      │   └──────────────────┘   │ functions recorded│
                   │ disposition, other│                         └──────────────────┘
                   └──────────────────┘
```

```
┌──────────────┐   ┌──────────────┐   ┌──────────────┐   ┌──────────────────┐
│   Medical    │→ │  Language    │→ │ To Screen    │→ │ Complete medical │
│   Summary    │   │  Generation  │   │ or Printer   │   │ record to screen │
│   Module     │   │  Module      │   │ Module       │   │ or printer       │
└──────────────┘   └──────────────┘   └──────────────┘   └──────────────────┘
      127              105               106
```

```
┌──────────────┐   ┌──────────────┐   ┌──────────────┐   ┌──────────────────┐
│ Nurse Notes  │→ │  Language    │→ │ To Screen    │→ │ Complete nurse   │
│  Summary     │   │  Generation  │   │ or Printer   │   │ notes to screen  │
│  Module      │   │  Module      │   │ Module       │   │ or printer       │
└──────────────┘   └──────────────┘   └──────────────┘   └──────────────────┘
      128              105               106
```

```
┌──────────────┐   ┌──────────────┐   ┌──────────────────┐
│ EKG Results  │→ │  Language    │→ │ EKG results      │
│   Module     │   │  Generation  │   │ displayed        │
└──────────────┘   │  Module      │   └──────────────────┘
      129          └──────────────┘
                       105
```

```
┌──────────────┐   ┌──────────────┐   ┌──────────────────┐
│ Vital Sign   │→ │ Nurse Notes  │→ │ Accumulated vital│
│ Summary      │   │  Module      │   │ signs displayed  │
└──────────────┘   └──────────────┘   └──────────────────┘
                       111
```

```
┌──────────────┐   ┌──────────────┐   ┌──────────────────┐
│ Lab Results  │→ │    Lab       │→ │ Accumulated and  │
│              │   │  Module      │   │ individual lab   │
└──────────────┘   └──────────────┘   │ results displayed│
                       116            └──────────────────┘
```

```
┌──────────────┐   ┌──────────────┐   ┌──────────────────┐
│ Prescribed   │→ │   Drug       │→ │ Prints prescriptions│
│ Meds         │   │  Module      │   │ and patient      │
│ Dispensed    │   └──────────────┘   │ instructions for │
└──────────────┘       123            │ use of drug      │
                                      └──────────────────┘
```

Figure 5:

nventor .ames E. Ross   Sheet 6 of 7
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```
Master Patient   →   Patient          Prequed          Add or delete        Video System    →   User valid, record
   Module             Instructions     complaints,       instruction topics,   Module              user, pass or
                      Module           instructions,     select video topic                        refuse
   107                130              prescriptions,    for in-room video     122
                                       and referrals     instructions
                                       displayed
```

```
                      Work/School      prints work or
                      Excuse           school excuse
                      Module
                      131
```

```
                      Demographics     Tracks patient
                      Module           demographics,
                                       employment,
                      132              guarantor,
                                       nearest contact,
                                       insurance,
                                       payment related
                                       classifications
```

```
                      Discharge        Tracking
                      patient from     Module
                      department
                                       102
```

```
                      Department       Tracking         Manages status of
                      Clerk            Module           outstanding
                      Module                            orders
                      133              102
```

```
                      Transcript       Edit prephased   Text included in
                      Module           or dictated text, medical record
                                       change medical   under appropriate
                      113              record component record component
                                       for text,
                                       add new text
                                       to any medical
                                       record component
```

```
                      Teleconference   Patients and/or
                      Module           medical personnel
                                       are linked.
                      134              Remote personnel
                                       can speak with
                                       and see local
                                       personnel or
                                       patients, view the
                                       medical record
                                       and place orders
```

```
   ACLS             Drugs given or     Select History of
   Module           actions            ACLS:
                    performed          history of all
   119              selected and       activity displayed
                    Given/Performed    with elapsed time
                    selected           since performed
```

```
   Laceration       Select wound,
   Module           tissue layer, materials
                    used and actions
   120              performed on each
```

Figure 6:

Inventor: James E. Ross   Sheet 7 of 7
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Utilities Module
104

Management: edit users, doctor drug prescription preferences, doctor drug order preferences, prephrased text

Reports

Data maintenance

Reports for variety of time ranges: visits shown in various arrangements, department status, department statistics, transcript status, length of stays repeat visit statistics, mortality, etc.

Scheduling Module
138

Manages scheduling of department personnel

Research Module
135

Automatic demographic stripped medical record analysis for generation of research data. Manages research protocols

Transcript Text Analysis Module
136

Text received over modem or other link analyzed for tags and broken into medical component parts

Transcript Module
113

Text blocks linked to patient medical record, linked to appropriate medical component

Medical Summary Module
127

Language Generation Module
105

To Screen or Printer Module
106

Complete medical record to printer

Automatic Backup Module
137

Automatic on-line backup of data with frequent interval backups of changed data

Interface Module
139

controls interface and exchange of data with other systems

Figure 7: